

(19) 
 Europäisches Patentamt
 European Patent Office
 Office européen des brevets

(11) Publication number:

0 149 689
A1

(12) **EUROPEAN PATENT APPLICATION**

(21) Application number: 84100319.7

(51) Int. Cl.⁴: **E 04 C 1/10**
E 04 B 2/02

(22) Date of filing: 13.01.84

(43) Date of publication of application:
31.07.85 Bulletin 85/31

(84) Designated Contracting States:
AT BE CH DE FR GB LI LU NL SE

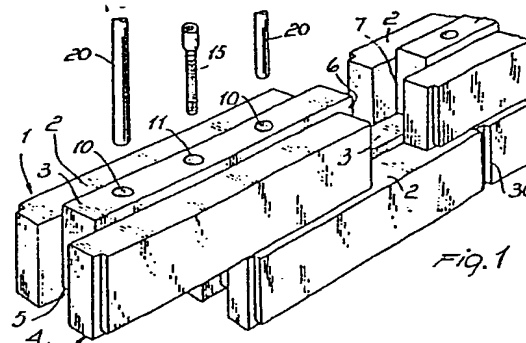
(71) Applicant: **VAEMA di VAVASSORI Mario & C.S.n.c.**
Via M. Montessori 1
I-24064 Grumello del Monte(IT)

(72) Inventor: **Vavassori, Mario**
Via M. Montessori, 1
I-24064 Grumello d. Monte Prov. Bergamo(IT)

(74) Representative: **Modiano, Guido et al,**
MODIANO, JOSIF, PISANTY & STAUB Modiano &
Associati Via Meravigli, 16
I-20123 Milan(IT)

(54) **Modular assembly element structure, particularly for erecting partition walls and the like.**

(57) This modular assembly element structure, in particular for erecting partition walls and the like, comprises a body (1) of substantially parallelepipedal shape defining, on top and bottom faces (2,4) thereof, respectively male interlocking elements (3) and female interlocking elements (5), and at the end thereof male and female coupling elements (6,7) for respective engagement with bodies superimposed and laid side-by-side. Furthermore the parallelepipedal body presents a pair of through holes (10) extending between the top and bottom faces (2,4) at a center-to-center distance substantially equal to half length of the body (1).



EP 0 149 689 A1

MODULAR ASSEMBLY ELEMENT STRUCTURE, PARTICULARLY FOR
ERECTING PARTITION WALLS AND THE LIKE

This invention relates to a modular assembly element structure, particularly for erecting partition walls and the like.

5 As is known, various types of modular assembly elements have long been available on the market for erecting partition walls and the like; such prior modular elements, however, have the disadvantage that their assembling procedure is relatively complex, as well as time-consuming when interconnect-
10 ing the various elements to produce a thick wall.

Another disadvantage of prior modular elements is that their assembling involves the availability of specialized labor in considerable number, which has unavoidably a significant adverse effect on costs.

15 It is an object of this invention to obviate such prior disadvantages by providing a modular assembly element structure, which is expressly designed for erecting partition walls and the like and has the peculiar characteristic of a very simple construction
20 enabling such elements to be assembled by simply matching them together and superimposing the modular elements to one another in an offset relationship, thus making a wall of a desired size.

A further object of the invention is to provide
25 a modular assembly element structure which, in addition to being of a high aesthetic quality, is designed to result in an article of manufacture having high strength characteristics and requiring no complex

or expensive anchoring arrangements for securing the wall itself.

Another object of this invention is to provide modular assembly elements which can be joined to one
5 another and mutually associated in a stable and reliable manner, while allowing, when necessary, said elements to be quickly taken apart for subsequent reuse.

A not unimportant object of this invention is to
10 provide modular assembly elements which may be readily formed from commercially available elements and materials, and are highly competitive from the purely economical standpoint.

These and other objects, such as will become
15 apparent hereinafter, are achieved by a modular assembly element structure particularly for erecting partition walls and the like, according to the invention, characterized in that it comprises a body
(1) of substantially parallelepipedal configuration
20 defining, on the top (2) and bottom (4) faces thereof, respectively, male interlocking elements (3) and female interlocking elements (5), and at the ends thereof male (6) and female (7) coupling elements, for respective engagement with superimposed bodies
25 and bodies laid side-by-side, there being further provided a pair of through holes (10) extending between said top (2) and bottom (4) faces at a center-to-center distance which is substantially equal to one half the length of said body (1).

30 Further features and advantages will be more

readily apparent from the following detailed description of this modular assembly element structure, with reference to the accompanying illustrative and not limitative drawings, where:

5 Figure 1 is a schematical perspective view of the modular elements according to the invention;

 Figure 2 is a perspective bottom view of a modular element;

10 Figure 3 shows several modular elements arranged side-by-side, in top plan view;

 Figure 4 illustrates schematically the configuration of a wall obtained by joining together two modular elements;

15 Figure 5 is a sectional view taken along the line V-V of Figure 4; and

 Figure 6 is a cut-away view of the stable fastening means used between modular elements.

 Making reference to the drawing views, the modular assembly element structure particularly for
20 erecting partition walls and the like, according to this invention, comprises a body, generally designated with the reference numeral 1, which is preferably, but not necessarily, made of wood and has a substantially parallelepipedal elongate configuration.

25 The body 1 defines, at its top face 2, a male interlocking element comprising a protuberance 3 which extends longitudinally on the face 2.

 Provided correspondingly on the bottom face 4 is a middle recess 5 extending longitudinally.

The body 1 is provided at its ends with male coupling elements comprising a projection 6, and correspondingly at its other end, with female coupling elements comprising a recess 7 and being
5 defined at the same middle region containing the male and female interlocking elements 3 and 5.

The male and female interlocking elements 3 and 5 allow, similarly to the male and female coupling elements 6 and 7, mutual interlocking of the super-
10 imposed and side-by-side bodies 1; more specifically, one body 1 would interlock with bodies 1 laid side-by-side and bodies 1 laid over and under it.

To make more stable the coupling at the middle region presenting the male and female interlocking
15 elements 3 and 5, a pair of through holes 10 are defined which extend vertically through the body 1 from its top face 2 to its face 4, which holes present center-to-center distances which are substantially equal to one half the useful length of
20 the body 1 and such that each through hole 10 is pitch laid, i.e. at the same center-to-center distance as the hole 10 in the side-by-side elements.

With this arrangement, to erect a wall, the bodies 1 may be stacked together offset by a half-length
25 relatively to the underlying bodies 1. The bodies 1 so arranged are joined to one another by means of vertical bars 20 which are inserted through the holes 10 in the various superimposed bodies which, on account of the positioning just described, will be all aligned.
30 Where a firmer mutual connection is required between

the various bodies, a throughgoing channel 11 would be provided in a middle portion between each pair of holes 10, said channel 11 comprising, at the bottom, a narrow region 12 for engagement with a fastening screw 15 which may be practically tightened onto the underlying body 1 and has its head practically in abutment relationship with the start of the narrow region.

It should be added to the foregoing that provided on the front faces of the bodies 1, on two adjoining sides, is a cutout 30 which creates in practice a decorative design enhancing the joint between the various bodies 1.

To form the vertical edges of a wall or partition wall, there are provided end bodies which are half as long as the bodies 1, thereby the vertical edges are practically closed flush; similarly to these, base elements may be provided for starting the wall, as may top end tile panels which can have their top face smooth and finished without the male interlocking element.

It may be appreciated from the foregoing description that the invention achieves its objects, and in particular that the various bodies 1 can be assembled together in a most simple manner by merely bringing together and interlocking the various bodies 1, which will then be held together by means of the vertical bars 20, which defeat all possibilities for relative movement.

Where a stabler connection is required, two bodies 1 can be firmly fastened to each other by means of

screws 15 provided in a number that will depend on the type of connection to be obtained, it being unnecessary to secure all of the bodies 1 by means of screws.

5 In practicing the invention, the materials used, although best results have been obtained when using wood, and the dimensions and contingent shapes may be any selected ones to meet individual requirements.

CLAIMS

1 1. A modular assembly element structure
2 particularly for erecting partition walls and the
3 like, characterized in that it comprises a body of
4 substantially parallelepipedal configuration defining,
5 on the top and bottom faces thereof, respectively,
6 male interlocking elements and female interlocking
7 elements, and at the ends thereof male and female
8 coupling elements, for respective engagement with su-
9 perimposed bodies and bodies laid side-by-side, there
10 being further provided a pair of through holes
11 extending between said top and bottom faces at a
12 center-to-center distance which is substantially
13 equal to one half the length of said body.

1 2. A modular assembly element structure according
2 to Claim 1, characterized in that said male and female
3 interlocking elements comprise respectively a
4 protuberance extending longitudinally on a middle
5 region of said top face and a recess correspondingly
6 extending on said bottom face.

1 3. A modular assembly element structure according
2 to the preceding claims, characterized in that said
3 male and female coupling elements comprise a projection
4 provided at a middle region of said body and a recess
5 correspondingly provided at the other end.

1 4. A modular assembly element structure according
2 to one or more of the preceding claims, characterized
3 in that said pair of through holes are arranged
4 centrally in said body at an area thereof which is
5 affected by said interlocking and coupling elements,

6 the distance between the holes in two side-by-side
7 bodies being equal to said center-to-center distance.

1 5. A modular assembly element structure according
2 to one or more of the preceding claims, characterized
3 in that it comprises, between said pair of throughgoing
4 holes, a throughgoing channel defining a narrow section
5 at the bottom, in said throughgoing channel there
6 being engageable a screw for fastening said body to
7 an underlying body.

1 6. A modular assembly element structure according
2 to one or more of the preceding claims, characterized
3 in that it comprises bars adapted for insertion through
4 said through holes in a plurality of superimposed
5 bodies.

1 7. A modular assembly element structure according
2 to one or more of the preceding claims, characterized
3 in that it comprises, at the rear front face of said
4 body, a cutout spanning two contiguous sides.

1 8. A modular assembly element structure
2 particularly for erecting partition walls and the like,
3 characterized in that it comprises one or more of the
4 features herein described and/or illustrated.

0149689

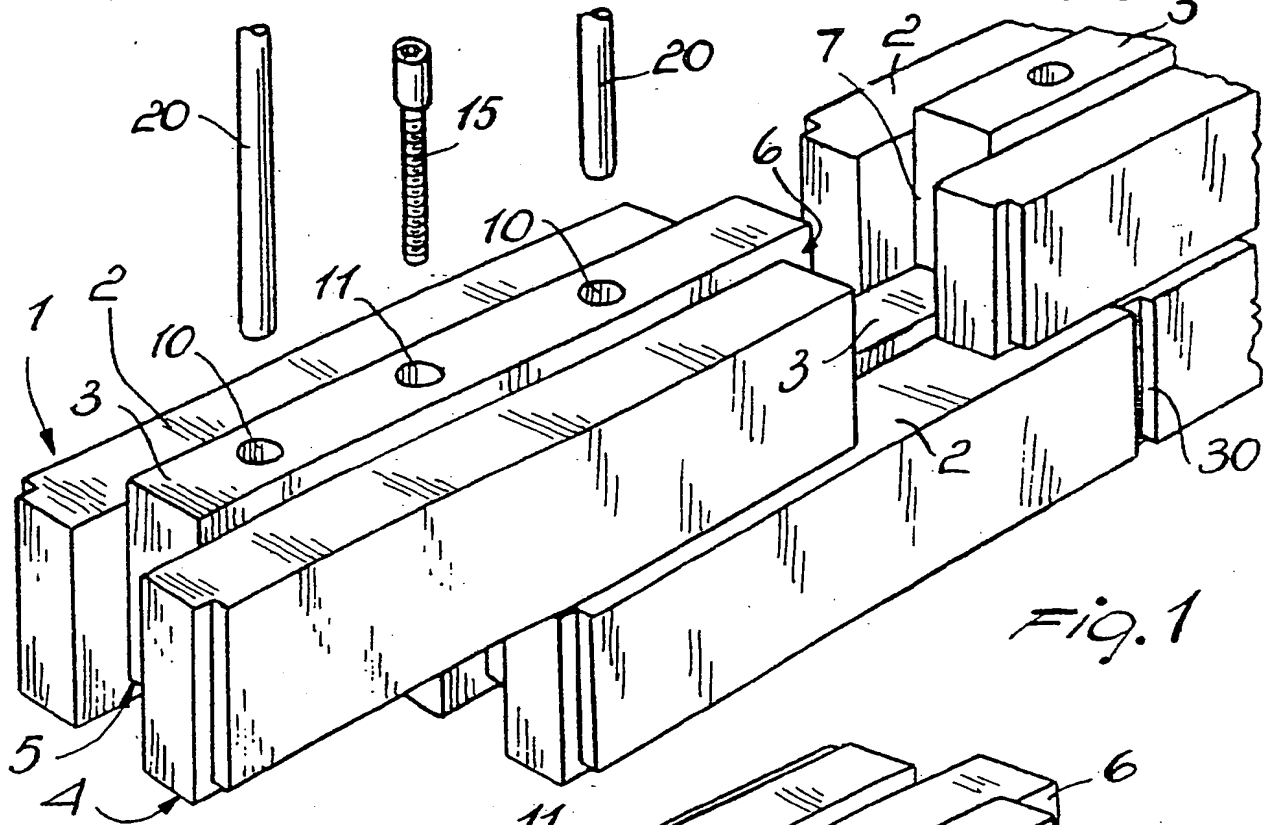


Fig. 1

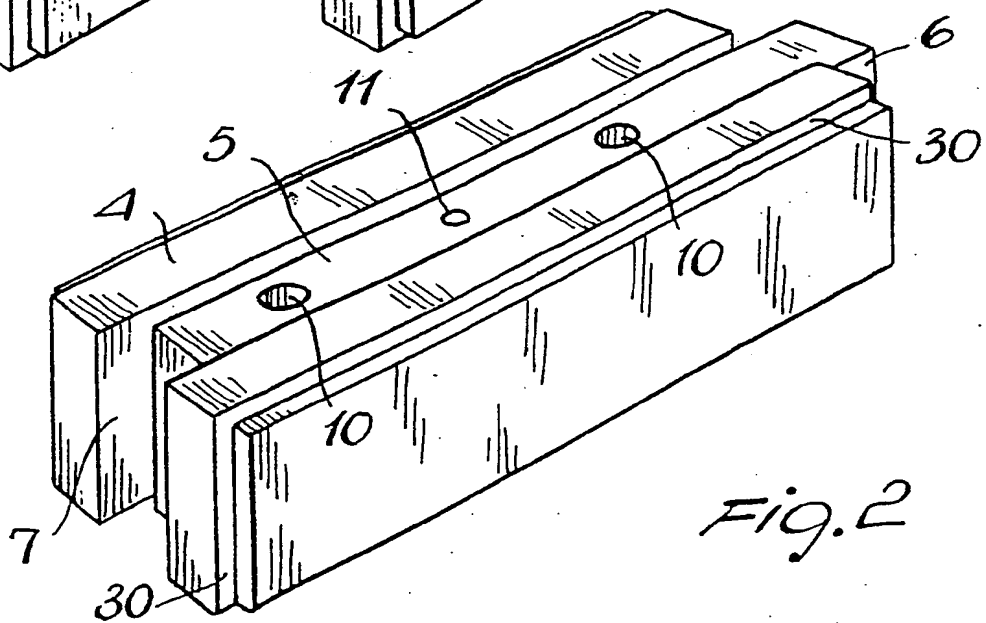


Fig. 2

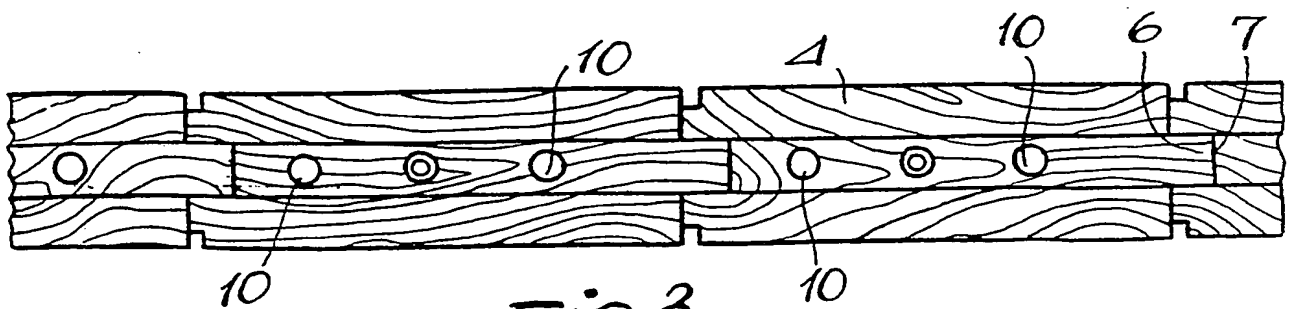


Fig. 3

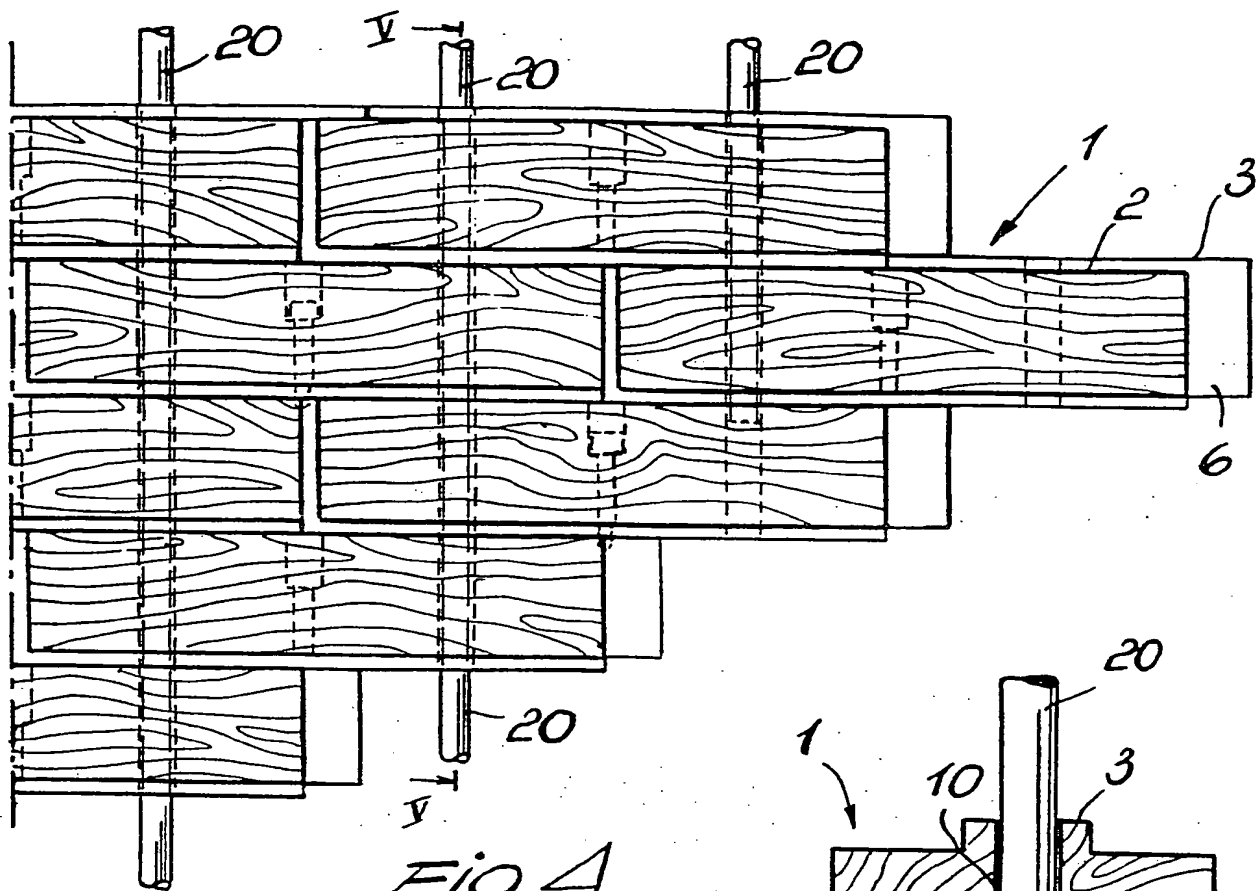


Fig. 4

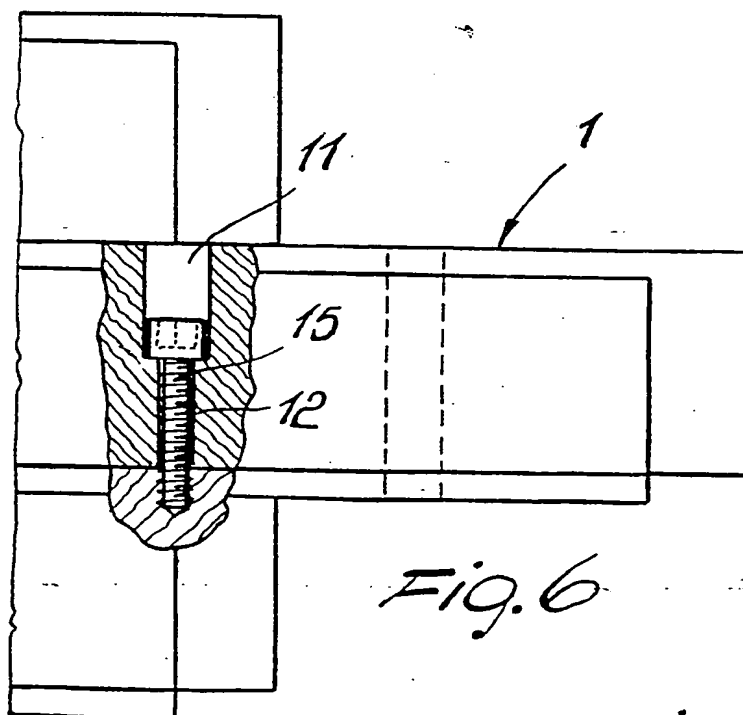


Fig. 6

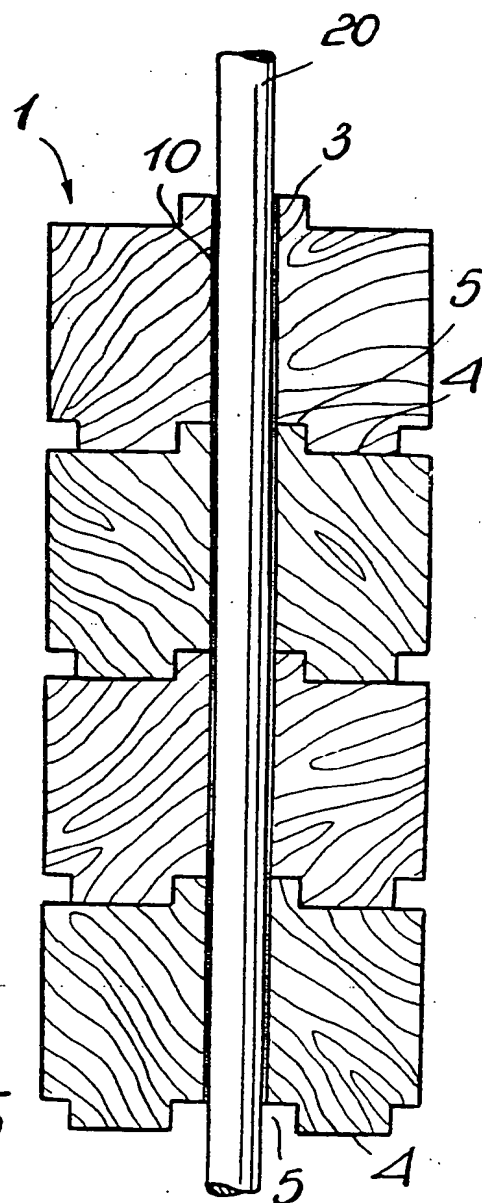


Fig. 5



European Patent
Office

EUROPEAN SEARCH REPORT

0149689

Application number

EP 84 10 0319

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|---|---|--|--|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. Cl. 3) |
| A | US-A-3 343 328 (E.M. ROLLE) * Whole document * | 1, 4, 5 | E 04 C 1/10 E 04 B 2/02 |
| A | DE-U-7 525 494 (H. SMETANA) * Whole document * ----- | 1-3 | |
| | | | TECHNICAL FIELDS SEARCHED (Int. Cl. 3) |
| | | | E 04 B 2/00 E 04 C 1/00 |
| The present search report has been drawn up for all claims | | | |
| Place of search BERLIN | | Date of completion of the search 03-09-1984 | Examiner VON WITTKEN-JUNGNIK |
| CATEGORY OF CITED DOCUMENTS | | | |
| X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document | | T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | |

EPO Form 1503 03 82

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☐ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.